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U. S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE

WASATCH NATIONAL FOREST

ALTA AVALANCE STUDY CENTER

Miscellaneous Report No. 6

MAN-MADE NOMINAL WIND ACTION AREA

PART II (WINTER 1962-63)

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This report discusses a continuation of experiments first described in Miscellaneous Report No. 3: MAN-MADE NOMINAL WIND ACTION AREA, published in June, 1962. This report compared precipitation observed with an unshielded precipitation guage and one shielded by the large circle of snow fence illustrated in Diagram No. 1. Purpose of this fence arrangement was to minimize wind effects and provide an accurate sampling of precipitation in an area of high storm winds, Berthoud Pass, Colorado.

During the fall of 1962, the modifications were made to the snow fence area and during the winter comparisons were again made between the catches of the two recording gauges (775-B's)

Modifications were as follows (See diagram No. 1)

1. Reduced air gap between ground and bottom of fence.
2. Reduced width of personnel entrance.
3. Increased distance of gauge orifices below top of double-layered fence.
4. Reduced amount of single fence at top of installation.
5. Due to settlement and stabilization of new fill did away with the mass of internal bracing.

Comparison data between the two winters were compiled and they show that in the winter of 1961-62 the Q-12 Park (unshielded) guage averaged 19% more than the "Corn Crib" guage, while this winter (1962-63), the emphasis shifted to the "Corn Crib" recorder. This guage then averaged 12% more than the Q-12 Park Recorder.

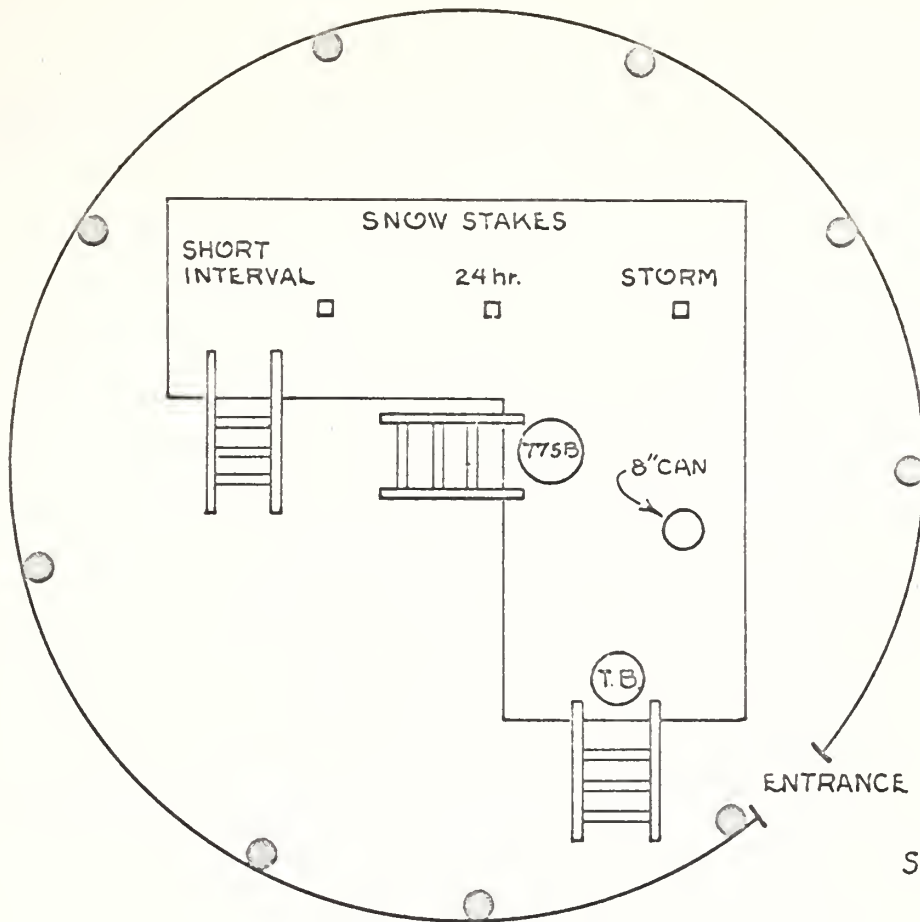
As can be seen in Fig. 1, during the winter of 1961-62 the Q-12 precipitation was always greater than the "Corn Crib" guage, while during the winter of 1962-63 the "Corn Crib" guage was consistently ahead of the Q-12 precipitation, but

generally the difference was reduced by nearly half.

It is felt that this type of installation will do an acceptable job in collecting precipitation and snowfall records in windy locations. It is planned to maintain the "Corn Crib" unaltered for next winter, and continue the comparison of the two catches. However, because the greater catch shifted suddenly to the "Corn Crib" area, it is perhaps important to mention that the Q-12 Park Recorder does not have a wind shield of any kind. This may mean that it isn't doing the job as well as it should. Therefore, to make the two gauges more equal in mechanical features a shield will be installed around the Q-12 Park gauge.

As a sidelight, it was very encouraging to look out the station window at night during a raging blizzard and observe snow falling almost vertically into the gauge and snowstake area within the "Corn Crib".

Data used in precipitation comparison are not complete for all precipitation for each whole month, but were picked at random, leaving out many figures within the .01 to .10 inch range.



Scale 1:40

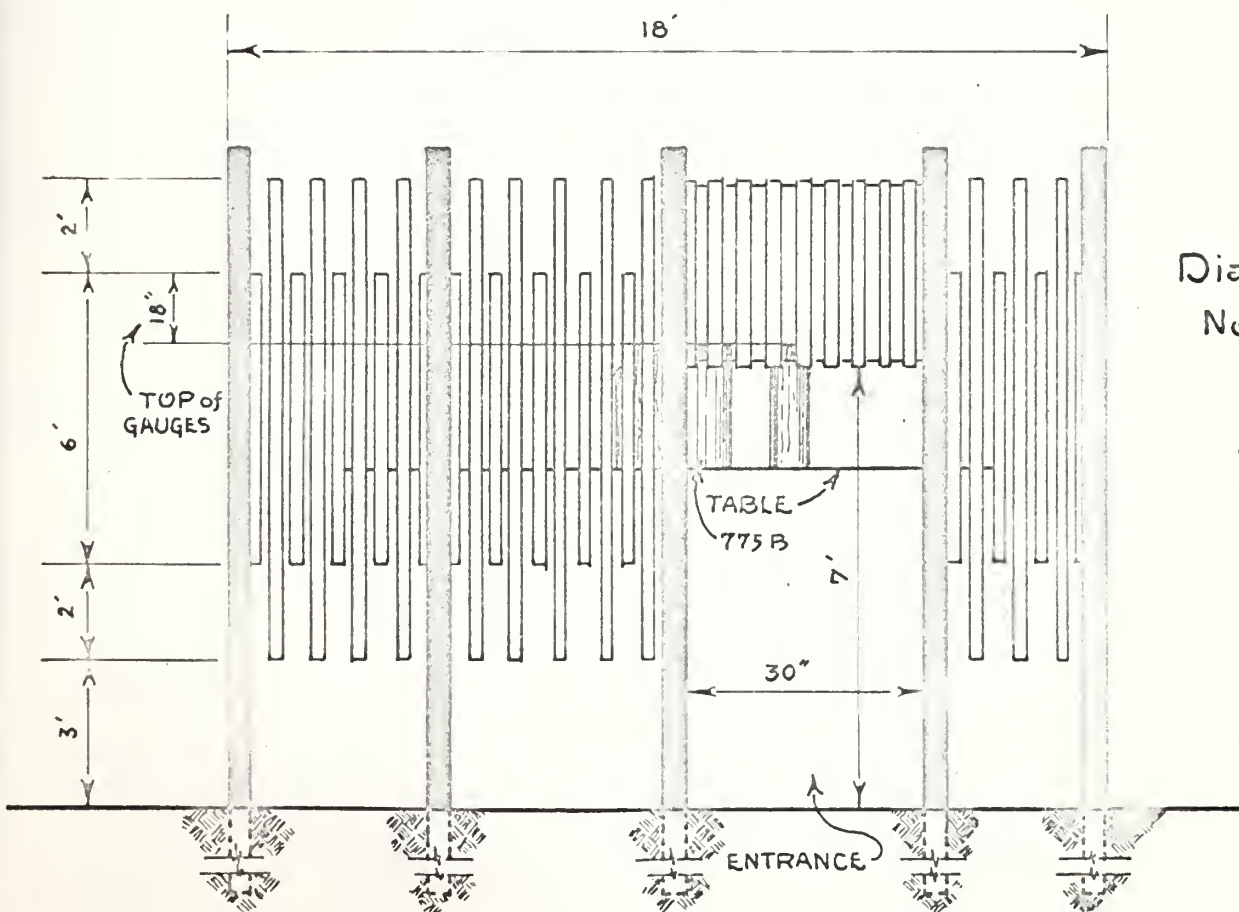


Diagram
No. 1

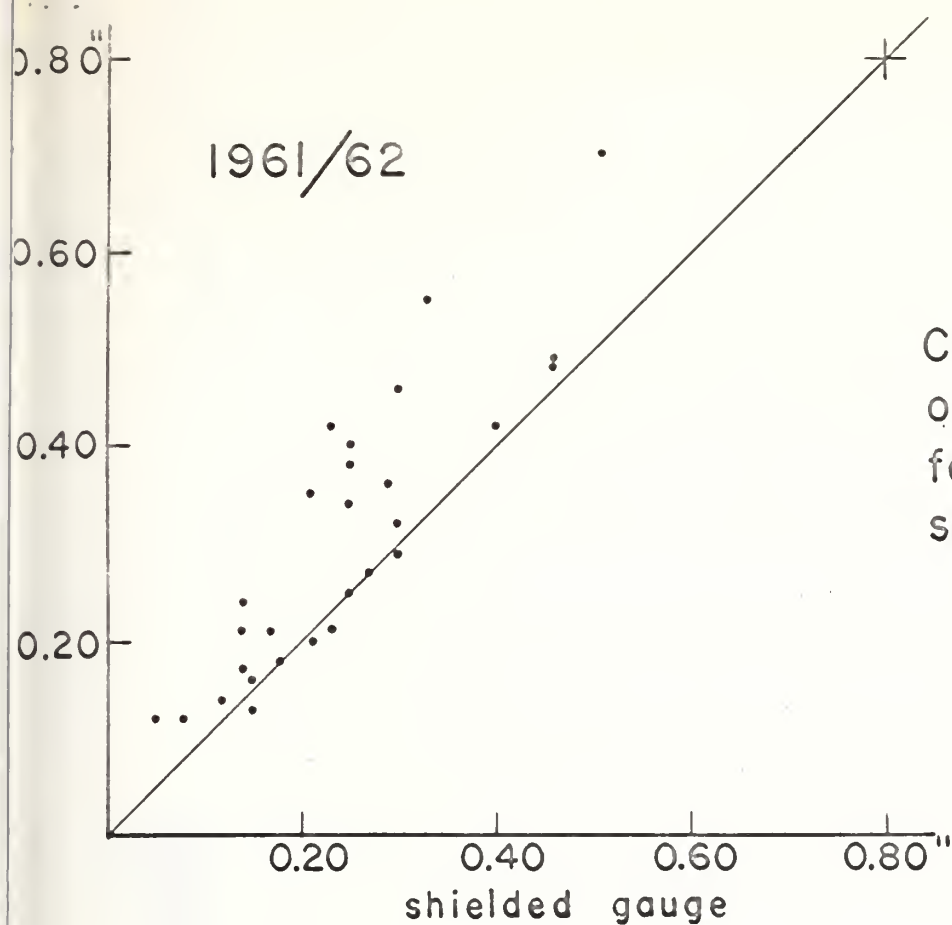


Fig. 1

Comparison of
observed precipitation
for principle winter
snowfalls.

